Amendments to the claims

1. (Currently amended) A method for producing an optically active β -amino acid of formula (2),

$$R^{1} \xrightarrow{*} R^{2} R^{3} \qquad (2)$$

[[,]] wherein b is 0 or 1; the symbol * shows that the carbon atom is a chiral carbon; R¹ is a hydrogen atom, an alkyl group, a substituted alkyl group, a cycloalkyl group, a substituted cycloalkyl group, an aralkyl group, a substituted aralkyl group, an aryl group, a substituted aryl group, an aliphatic heterocyclic group, a substituted aliphatic heterocyclic group, an aromatic heterocyclic group, a substituted aromatic heterocyclic group, an alkoxy group, a substituted alkoxy group, an aralkyloxy group, a substituted aralkyloxy group, an aryloxy group or a substituted aryloxy group; R2 is a hydrogen atom, an alkyl group, a substituted alkyl group, a cycloalkyl group, a substituted cycloalkyl group, an aralkyl group, a substituted aralkyl group, an aryl group, a substituted aryl group, an aliphatic heterocyclic group, a substituted aliphatic heterocyclic group, an aromatic heterocyclic group, a substituted aromatic heterocyclic group, an alkoxy group, a substituted alkoxy group, an aralkyloxy group, a substituted aralkyloxy group, an aryloxy group, a substituted aryloxy group, an alkyloxycarbonyl group or an aralkyloxycarbonyl group; R3 is an alkoxy group, a substituted alkoxy group, an aralkyloxy group, a substituted aralkyloxy group, an aryloxy group, a substituted aryloxy group, an amino group or a substituted amino group, X' is an acid, and R1 and R2 or R2 and R3 may be combined together to form a ring ring, provided that R¹ and R² are not a hydrogen atom simultaneously, provided that R¹, R² and R³ are not substituted with a heterocyclic or heteroaryl ring, provided that R¹ and R² are not combined to form a heterocyclic or heteroaryl ring, and provided that R² and R³ are not combined to form a heterocyclic or heteroaryl ring, which comprises subjecting contacting an enamine of formula (1),

$$R^{1} \xrightarrow{R^{2}} R^{3}$$
 (1)

[[,]] wherein R¹, R², R³ and X' have the same meanings as described above, and a is 0 or 1, to an asymmetric hydrogenation with hydrogen and a transition metal complex, to produce the optically active β-amino acid of formula (2).

- 2. (Currently amended) The method as claimed in claim 1, wherein the asymmetric hydrogenation is carried out the enamine of formula (1) and hydrogen are contacted in the presence of an acid.
- 3. (Currently amended) The method as claimed in claim 1, wherein the asymmetric hydrogenation is carried out the enamine of formula (1) and hydrogen are contacted in the presence of a fluorine-containing aliphatic alcohol.

4-5. (Cancelled)

6. (Currently amended) The method as claimed in claim $5 \underline{1}$, wherein the transition metal complex is a complex of a metal which belong to the eighth group of the periodic table.

- 7. (Currently Amended) The method as claimed in claim 5 1, wherein the transition metal complex has a chiral ligand.
- **8.** (Original) The method as claimed in claim 7, wherein the chiral ligand is a chiral phosphine ligand.
- 9. (Currently amended) The method as claimed in claim 1, wherein the asymmetric hydrogenation is carried out the enamine of formula (1) and hydrogen is contacted in the presence of an acid and a fluorine-containing aliphatic alcohol.

10-12. (Cancelled)

13. (New) The method as claimed in claim 1, wherein the transition metal complex is represented by the formula (7):

$$M_{m}L_{n}X_{n}Y_{n} \tag{7}$$

wherein, M is a transition metal of the VIII group, L is a chiral ligand, X is a halogen atom, a carboxylate group, an allyl group, 1,5-cyclooctadiene or norbornadiene, Y is a ligand, and m, n, p, and q are an integer of 0 to 5.

14. (New) The method as claimed in claim 1, wherein the transition metal complex is represented by the formula (8):

$$[M_m L_n X_p Y_q] Z_s (8)$$

wherein, M is a transition metal of the VIII group, L is a chiral ligand, X is a halogen atom, a carboxylate group, an allyl group, 1,5-cyclooctadiene or norbornadiene, Y is a ligand, Z is an anion, and m, n, p, q, and s are an integer of 0 to 5.